CLAIMS:

1. A modular part processor for assembling, testing, and/or packaging parts; the modular part processor including one or more modular units; each modular unit comprising:

at least one structural member;

at least one actuator mounted to said at least one structural member; said actuator having a body and a rod which is extendible and retractable relative to said body;

a controller in communication with said actuator to control the extension and retraction of said actuator rod, to be moved to multiple stops with programmed acceleration and velocity.

a slide rail mounted to said structural member;

a slide slidable along said slide rail; said actuator rod being operatively connected to said slide to move said slide along said slide rail; and

a machine part connected to said slide, said machine part performing an operation on said parts.

2. The modular part processor of claim 1 wherein said actuator is a servo-controlled actuator; said actuator including a dedicated controller; said controller including said dedicated controller and a control system in communication with said dedicated controller; said dedicated controller activating said servo-actuator to extend or retract said actuator rod in response to signals received from said control system.

3. The modular part processor of claim 1 wherein said structural member includes a plurality of faces; a groove in at least one of said faces, said groove is generally T-shaped, said groove including a base portion and a narrower neck portion extending from said base portion to said face; and a hole extending at least partially through said member.

4. The modular part processor of claim 3 wherein said structural member is an extruded part.

5. The modular part processor of claim 3 wherein a headed part is receivable in said groove to connect a plurality of said structural members together, to mount said slide rail to said structural member, or to mount said machine part to said structural member.

6. The modular part processor of claim 5 wherein said headed part is a button or a threaded fastener.

7. The modular part processor of claim 1 wherein the modular unit includes a first actuator and a second actuator mounted in said unit; the rod of said first actuator moving in first-axis and the rod of a second actuator moving in a second axis perpendicular to said first axis; said second actuator being operatively connected to said first actuator rod to be moved in said first axis; said machine part being operatively connected to said second actuator rod; whereby, controlled movement of said first and second actuator rods by said controller moves said machine part in two axes.

8. The modular part processor of claim 1 wherein the modular unit includes a first actuator, a second actuator, and a third actuator mounted in said

unit; the rod of said first actuator moving in first-axis, the rod of said second actuator moving in a second axis perpendicular to said first axis; said first and second axes defining a first plane; and the rod of third actuator moving in a third axis in a plane offset from said first plane; said second actuator being operatively connected to said first actuator rod to be moved in said first axis; said third actuator being operatively connected to said second actuator rod to be moved in said second axis; and said machine part being operatively connected to said third actuator rod; whereby, controlled movement of said first, second, and third actuator rods by said controller moves said machine part in three axes.

9. The modular part processor of claim 1 wherein said machine part is a rake, a tray, or a gripper.

10. A processing unit for processing a product, the processing unit including at least one module which acts on said product to move said product along a desired axis, said module including:

at least one structural frame member;

a linear actuator mounted to said at least one structural frame member; said actuator having a body and a rod which is extendible and retractable relative to said body;

a controller in communication with said actuator to control the extension and retraction of said actuator rod;

a slide rail mounted to said structural frame member;

a slide slidable along said slide rail; said actuator rod being operatively connected to said slide to move said slide along said slide rail; and

a machine part connected to said slide, said machine part performing an operation on said parts.

11. The processing unit of claim 10 wherein said unit includes a first and a second of said modules to move said product in two axes, said second module being operatively connected to the linear actuator rod of said first module to be moved by said first module, and said machine part being operatively connected to the linear actuator rod of said a second module.

12. The processing unit of claim 10 wherein said unit includes a first, a second, and a third of said modules to move said product in three axes, said second module being operatively connected to the linear actuator rod of said first module to be moved by said first module; said third module being operatively connected to the linear actuator of said second module; and said machine part being operatively connected to the linear actuator rod of said third module.

13. The processing unit of claim 10 wherein a plurality of said units are connected together to form a processing system.

14. The processing unit of claim 9, wherein said rake connected to a actuator rod and slides perpendicular to a feed direction of the parts being fed by feeding device.

15. The rake of claim 14 wherein said rake has the plurality of packets shaped to receive the part and index forward until packet provided as pre determined distance receive parts, as a single batch.

16. The single batch of parts of claim 15, wherein said parts are picked and placed by a plurality of grippers carried by a processing system.